

CLAIMS

1. An elastic-wave filter comprising two longitudinally-coupled-resonator-type elastic-wave filter elements that are cascade-connected with each other, each longitudinally-coupled-resonator-type elastic-wave filter element including three IDTs arranged on a piezoelectric substrate in a transmitting direction of an elastic wave,

wherein, in at least one of the longitudinally-coupled-resonator-type elastic-wave filter elements, electrode fingers of one or two of the IDTs that are cascade-connected are arranged at a pitch that is smaller than a pitch of electrode fingers of the remaining IDT(s) such that a frequency of a conductance peak in said one or two of the cascade-connected IDTs is higher than a frequency of a conductance peak in the remaining IDT(s).

2. The elastic-wave filter according to Claim 1, wherein in each of the longitudinally-coupled-resonator-type elastic-wave filter elements, electrode fingers of one or two of the IDTs that are cascade-connected are arranged at a pitch that is smaller than a pitch of electrode fingers of the remaining IDT(s).

3. The elastic-wave filter according to one of Claims 1 and 2, wherein a relative dielectric constant of the piezoelectric substrate is set at 30 or more.

4. The elastic-wave filter according to one of Claims 1 and 2, wherein a center frequency of a passband is set at 500 MHz or more.

5. The elastic-wave filter according to any one of Claims 1 to 4, wherein the IDTs are aligned in a transmitting direction of a surface acoustic wave.

6. The elastic-wave filter according to any one of Claims 1 to 4, further comprising a thin film which is disposed on the piezoelectric substrate and has an elastic constant or a density that is different from that of the piezoelectric substrate,

wherein the IDTs are aligned in a transmitting direction of an elastic boundary wave between the piezoelectric substrate and the thin film.

7. A communication device comprising the elastic-wave filter according to one of Claims 1 to 6.